

yn



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
 United States Patent and Trademark Office
 Address: COMMISSIONER FOR PATENTS
 P.O. Box 1450
 Alexandria, Virginia 22313-1450
 www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/036,396	01/07/2002	Mutsumi Kimura	111629	3624
25944	7590	12/28/2004	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			OSORIO, RICARDO	
			ART UNIT	PAPER NUMBER
			2673	

DATE MAILED: 12/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/036,396

Applicant(s)

KIMURA, MUTSUMI

Examiner

RICARDO L OSORIO

Art Unit

2673

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 7-21-2004 & 7-30-2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 5,6,14 and 15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,7-13 and 16-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11242004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. **Claims 21 and 22** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. New claims 21 and 22, which were added in amendment filed 7-21-2004, read "the sizes of said plurality of said pixels being differentiated from each other". The specification only makes reference, on page 8, line 22-page 9, line 4, and on page 11, line 23-page 12, line 5, to the **area, or size, difference between two sub-pixels within the same pixel**. However, the specification does not make any reference whatsoever to the **area, or size, difference between pixels**. Therefore, there is no support in the specification for this limitation.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1, 2, 10, 11, 17, 19 and 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Huston et al (US 2002/0101396) in view of Tsuboyama et al (5,808,594).

Regarding claims 1, 10, 17, 19 and 20, Huston teaches of an electro-optical, or display, device to be used in an electronic apparatus comprising a plurality of signal lines; a plurality of scanning lines; pixels disposed in a matrix at intersections of the plurality of signal lines and the plurality of scanning lines (see page 1, paragraph 3, page. 11, paragraph 151, lines 1-8); each of said pixels including a plurality of sub-pixels that are each provided with a static random access memory and an electro-optical element (see page 7, paragraphs 99 and 105, and page 13, paragraph 180, lines 1-7).

However, the device of Huston fails to teach of a size of each of at least two of said sub-pixels being differentiated from each other.

Tsuboyama teaches of a size, or area, of each of at least two sub-pixels, in each pixel, being differentiated from each other (see Figs. 1B, 1C, 8A and 8C, col. 2, lines 16-28 and 53-56, col. 4, lines 23-25, and col. 9, lines 21-32).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have sub-pixels with sizes differentiated from each other, as taught by Tsuboyama, in the device of Huston to obviate an image quality deterioration of so called "false contour" due to an increased number of scanning lines, thereby allowing a high-quality image display (see col. 2, lines 53-56).

Regarding claims 2 and 11, furthermore, Huston teaches of said sub-pixels, or electro-optical elements, receiving data supplied to control a luminance level being set in one of an On, higher luminance level, or state, and an OFF, lower luminance level, or state (page 7, paragraph 105. Although not specifically mentioned, it is inherent that the sub-pixel will at least be On or OFF).

Art Unit: 2673

5. **Claims 3-4 and 12-13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Huston et al (US 2002/0101396) in view of Tsuboyama et al (5,808,594) as applied to claims 1, 2, 10, 11, 17, 19 and 20 above, and further in view of Sato et al (5,357,583).

Regarding claims 3 and 12, further, the device of Huston, as anticipated by Tsuboyama, does not precisely teach of a greyscale level being set by a function of a ratio of a maximum luminance level of each of the pixels to a sum of luminance levels of all the sub-pixels, or electro-optical elements, included, or contained, in each of the pixels.

Sato teaches of a greyscale level being set by a function of a ratio of a maximum luminance level of each of the pixels to a sum of luminance levels of all the sub-pixels, or electro-optical elements, included, or contained, in each of the pixels (col. 5, lines 55-59).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the luminance ratio and the sum of luminance levels, as taught by Sato, in the combined device of Huston and Tsuboyama because this luminance ratio and sum of luminance levels method is a well known in the art of ratio gradation methods (col. 5, line 52).

Regarding claims 4 and 13, further, the device of Huston as anticipated by Tsuboyama, does not precisely teach of a grayscale level being set by a function of a ratio of an area occupied by each of said pixels, or by all the electro-optical elements contained in one of said pixels, to a total area occupied by the sub-pixels in the ON state included in the each of said pixels, or by the electro-optical elements set at the higher luminance level.

Sato teaches of a grayscale level being set by a function of a ratio of an area occupied by each of said pixels, or by all the electro-optical elements contained in one of said pixels, to a total area

occupied by the sub-pixels in the ON state included in the each of said pixels, or by the electro-optical elements set at the higher luminance level (col. 5, lines 55-59).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the area ratio, as taught by Sato, in the combined device of Huston and Tsuboyama because this area ratio method is a well known in the art of ratio gradation methods (col. 5, line 52).

6. **Claims 7 and 16** are rejected under 35 U.S.C. 103(a) as being unpatentable over Huston et al (US 2002/0101396) in view of Tsuboyama et al (5,808,594) as applied to claims 1, 2, 10, 11, 17, 19 and 20 above, and further in view of Alt et al (6,697,037).

Regarding claims 7 and 16, Huston teaches that said electro-optical elements can include LCDs, spatial light modulators, gratings, mirror light valves, and LED arrays (page 6, paragraph 90).

However, the device of Huston, as anticipated by Tsuboyama, does not specifically include electroluminescent arrays.

Alt teaches of electro-optical elements including subpixel SRAM memories for electroluminescent arrays (col. 6, lines 37-48 and col. 9, lines 1-5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the electroluminescent elements because EL elements are just another example of pixel element arrays with the SRAM memories.

7. **Claims 8-9 and 18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Huston et al (US 2002/0101396) in view of Tsuboyama et al (5,808,594) and further in view of Sato et al (5,357,583).

Art Unit: 2673

Regarding claims 9, and 18 (see rejection of claims 1, 10 and 17 in paragraph 4 above), further, Huston does not precisely teach of obtaining a greyscale by using a ratio of a maximum luminance level of each of said pixels to a sum of luminance levels of the sub-pixels in the ON state included in each of said pixels.

Sato teaches of obtaining a greyscale by using a ratio of a maximum luminance level of each of said pixels to a sum of luminance levels of the sub-pixels in the ON state included in each of said pixels (col. 5, lines 55-59).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the luminance ratio, as taught by Sato, in the combined device of Huston and Tsuboyama because this luminance ratio method is a well known in the art ratio gradation methods (col. 5, line 52).

Regarding claim 8, (see rejection of claims 1, 10 and 17 in paragraph 4 above), further, Huston does not precisely teach of obtaining a grayscale by using a ratio of an area occupied by each of said pixels to a total area occupied by the sub-pixels in the ON state included in each of said sub-pixels.

Sato teaches of obtaining a grayscale by using a ratio of an area occupied by each of said pixels to a total area occupied by the sub-pixels in the ON state in each of said sub-pixels (col. 5, lines 55-59).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the area ratio, as taught by Sato, in the device of Huston because this area ratio method is a well known in the art ratio gradation method (col. 5, line 52).

Response to Arguments

8. Applicant's arguments with respect to claims 1-4, 7-13, and 16-20 have been considered but are moot in view of the new ground(s) of rejection (see above rejection).

Applicant argues, in the remarks filed on 7-21-2004, page 7, lines 15-16, that "Specifically, Huston does not mention the sized of the SRAM cells, i.e., the luminance per unit area".

This argument is moot since none of the claims present a limitation based on this statement.

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ricardo L. Osorio whose telephone number is 703 305-2248. The examiner can normally be reached on Monday through Thursday from 7:00 A.M. to 5:30

Art Unit: 2673

P.M. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala whose telephone number is 703 305-4938.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

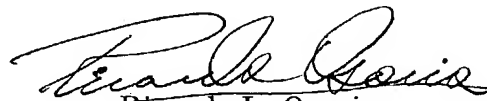
Washington, D.C. 20231

or faxed to:

703 872-9306 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ricardo L. Osorio

Examiner

Art Unit: 2673

RLO

December 22, 2004